WHAT IS CLAIMED IS:

1. A thin type permanent magnet generator that can be incorporated in a diskette, comprising:

a disc-shaped rotor having a soft magnetic disc-shaped hub that is rotatable around a rotational axis, and a flat ring-shaped permanent magnet concentrically fitted to an end of the hub; the permanent magnet axially magnetized in such a manner as to have a plurality of magnetic poles of alternately different polarities in the circumferential direction on each end face thereof; the magnetic poles on one end face of the permanent magnet being magnetically short-circuited with the hub, and the magnetic poles on the other end face serving as rotor magnetic poles, and

a stator having a plurality of magnetic pole teeth having on an end thereof a plurality of stator magnetic poles that can face the rotor magnetic poles at the same pole intervals via an axial gap and extending radially outward from the stator magnetic poles; the magnetic pole teeth connected at the other end to each other by a soft magnetic yoke and having coils wound on the intermediate portions thereof;

the ratio of generator thickness/diagonal length of generator end face being not more than 6 %.

2. A thin type permanent magnet generator as set forth in Claim 1, wherein the outer periphery of the hub protrudes not less than 0.3 mm from the outer periphery of the permanent magnet.

3. A thin type permanent magnet generator as set forth in Claim 2, wherein an end of each of the stator magnetic poles on the side facing the rotor magnetic poles protrudes not less than 0.3 mm radially inward to the central opening of the permanent magnet.

4. A thin type permanent magnet generator as set forth in Claim 1, wherein a distance between portions of the adjacent stator magnetic poles facing the rotor magnetic poles is 0.3 mm to 1.0 mm.

5. A thin type permanent magnet generator as set forth in Claim 3, wherein a distance between portions of the adjacent stator magnetic poles facing the rotor magnetic poles is 0.3 mm to 1.0 mm.

6. A thin type permanent magnet generator as set forth in Claim 1, wherein the magnetic pole teeth each have a step difference in the axial direction between the portion facing the rotor magnetic pole and the portion having a coil wound thereon; the overall thickness being reduced by the step difference.

7. A thin type permanent magnet generator as set forth in Claim 5, wherein the magnetic pole teeth each have a step difference in the axial direction between the portion facing the rotor magnetic pole and the portion having a coil wound thereon; the overall thickness being made thinner by the step difference.

8. A thin type permanent magnet generator as set forth in Claim 6, wherein the magnetic pole teeth each have an inclined portion at the step difference; the inclined portion having a 30 to 60° angle with respect to the longitudinal direction of the entire magnetic pole teeth.

9. A thin type permanent magnet generator as set forth in Claim 7, wherein the magnetic pole teeth each have an inclined portion at the step difference; the inclined portion having a 30 to 60° angle with respect to the longitudinal direction of the entire magnetic pole teeth.

10. A thin type permanent magnet generator as set forth in Claim 1, wherein the permanent magnet is a bonded magnet containing SmFeN magnetic powders or NdFeB magnetic powders, or a sintered NdFeB magnet.

11. A thin type permanent magnet generator as set forth in Claim 9, wherein the permanent magnet is a bonded magnet containing SmFeN magnetic powders or NdFeB magnetic powders, or a sintered NdFeB magnet.

12. A thin type permanent magnet generator as set forth in Claim 10, wherein the permanent magnet is a bonded NdFeB magnet containing NdFeB magnetic powders.

13. A thin type permanent magnet generator as set forth in Claim 11, wherein the permanent magnet is a bonded NdFeB magnet containing NdFeB magnetic powders.

14. A thin type permanent magnet generator as set forth in Claim 1, wherein the hub is supported by an anti-friction bearing so as to be rotatable around the rotational axis.

15. A thin type permanent magnet generator as set forth in Claim 13, wherein the hub is supported by an anti-friction bearing so as to be rotatable around the rotational axis.

16. A thin type permanent magnet generator as set forth in Claim 14, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a hardness of not less than HRC35.

17. A thin type permanent magnet generator as set forth in Claim 15, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a hardness of not less than HRC35.

18. A thin type permanent magnet generator as set forth in Claim 16, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a U-shaped groove.

19. A thin type permanent magnet generator as set forth in Claim 17, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a U-shaped groove.

20. A diskette incorporating a thin type permanent magnet generator comprising

a diskette case of a floppy magnetic disc shape,

a disc-shaped rotor having a soft magnetic disc-shaped hub provided inside the diskette and caused to rotate around a rotational axis by an external drive mechanism, and a flat ring-shaped permanent magnet concentrically fitted to an end face of the hub; the permanent magnet being axially magnetized so as to have a plurality of magnetic poles of alternately different polarities in the circumferential direction on each end face thereof; and the magnetic poles on an end face of the permanent magnet being magnetically short-circuited by the hub, and the magnetic poles on the other end face serving as rotor magnetic poles, and

a stator fitted to the diskette case having a plurality of magnetic pole teeth having on an end each of a plurality of stator magnetic poles that can face the rotor magnetic poles at the same pole intervals via an axial gap and extending radially outward from the state magnetic poles; the magnetic pole teeth being connected at the other end to each other by a soft magnetic yoke and having coils wound on the intermediate portions thereof; the ratio of generator thickness/diagonal length on the end face of the generator is not more than 6 %.

21. A diskette as set forth in Claim 20, wherein the thickness in the magnetizing direction of the permanent magnet is not less than 10% and not more than 30% of the

thickness of the diskette, and a gap between the magnet and the stator magnetic poles is not less than 2% and not more than 15% of the thickness of the diskette.

22. A diskette as set forth in Claim 20, wherein the outer periphery of the hub protrudes not less than 0.3 mm from the outer periphery of the permanent magnet.

23. A diskette as set forth in Claim 22, wherein an end of each of the magnetic poles on the side facing the rotor magnetic poles protrudes not less than 0.3 mm radially inward to the central opening o f the permanent magnet.

24. A diskette as set forth in Claim 20, wherein a distance between portions of the adjacent stator magnetic poles facing the rotor magnetic poles is 0.3 mm to 1.0 mm.

25. A diskette as set forth in Claim 23, wherein a distance between portions of the adjacent stator magnetic poles facing the rotor magnetic poles is 0.3 mm to 1.0 mm.

26. A diskette as set forth in Claim 20, wherein the outside diameter of the permanent magnet is 24 to 34 mm, and the inside diameter thereof is not less than 12 mm.

27. A diskette as set forth in Claim 25, wherein the outside diameter of the permanent magnet is 24 to 34 mm, and the inside diameter thereof is not less than 12 mm.

28. A diskette as set froth in Claim 20, wherein the magnetic pole teeth have axial step differences between the portion thereof facing the rotor magnetic poles and the portion thereof on which coils are wound; the overall thickness being reduced by the step difference.

29. A diskette as set froth in Claim 27, wherein the magnetic pole teeth have axial step differences between the portion thereof facing the rotor magnetic poles and the portion thereof on which coils are wound; the overall thickness being reduced by the step difference.

30. A diskette as set forth in Claim 28, wherein the magnetic pole teeth each have an inclined portion at the step difference; the inclined portion having a 30 to 60° angle with respect to the longitudinal direction of the entire magnetic pole teeth.

31. A diskette as set forth in Claim 29, wherein the magnetic pole teeth each have an inclined portion at the step difference; the inclined portion having a 30 to 60° angle with respect to the longitudinal direction of the entire magnetic pole teeth.

32. A diskette as set forth in Claim 20, wherein the permanent magnet is a bonded magnet containing SmFeN magnetic powders or NdFeB magnetic powders, or a sintered NdFeB magnet.

33. A diskette as set forth in Claim 31, wherein the permanent magnet is a bonded magnet containing SmFeN magnetic powders or NdFeB magnetic powders, or a sintered NdFeB magnet.

34. A diskette as set forth in Claim 32, wherein the permanent magnet is a bonded NdFeB magnet containing NdFeB magnetic powders.

35. A diskette as set forth in Claim 33, wherein the permanent magnet is a bonded NdFeB magnet containing NdFeB magnetic powders.

36. A diskette as set forth in Claim 20, wherein the hub is supported by an anti-friction bearing so as to be rotatable around the rotational axis.

37. A diskette as set forth in Claim 35, wherein the hub is supported by an anti-friction bearing so as to be rotatable around the rotational axis.

38. A diskette as set forth in Claim 36, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a hardness of not less than HRC35.

39. A diskette as set forth in Claim 37, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a hardness of not less than HRC35.

40. A diskette as set forth in Claim 38, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a U-shaped groove.

41. A diskette as set forth in Claim 39, wherein the portion of the hub which comes in contact with balls of the anti-friction bearing has a U-shaped groove.

42. A diskette as set forth in Claim 20, wherein an engaging portion for engaging with an external drive mechanism is provided on an end face of the hub; the engaging portion comprising a central hole provided at the center of the hub and a recess provided at a location displaced from the central hole on the hub surface;

the recess comprising a through hole provided on the hub and a recess provided on the permanent magnet surface extending from the through hole.

43. A diskette as set forth in Claim 42, wherein a bottom plate made of a soft magnetic material is fitted into the recess provided on the permanent magnet surface.

44. A diskette as set forth in Claim 20, wherein a memory card space is provided in the diskette case adjacent to the permanent magnet generator, and the end face of the